

CLAIMS

1. A device to generate pulsed motions, comprising:

(A) Two parallel shafts (3; 4) each having a longitudinal axis (5; 6), each having a rear end (7; 8) and each having a front end (9; 10);

5 (B) a gear unit (2) comprising at least two gears (20; 21) , at least two gears (20) being oval gears and each gear (20; 21) being connected to one of the rear ends (7; 8) of the two shafts (3; 4);

(C) Two arcuate drive levers (30; 31) each having a first end (32; 33) and each having at least one second end (34; 35), where each first end (32; 33) of the drive levers (30; 31) are
10 connected in rotatable manner with one respective front end (9; 10) of the two shafts (3; 4) about a first axis of rotation (11; 12); and

(E) a drive body (40) connected to the second ends (34; 35) of the drive levers (30; 31) so as to be rotatable about two second axes of rotation (13; 14),

characterized in that

15 (F) The drive body (40) is a polysomic body.

2. Device as claimed in claim 1, characterized in that the drive body (40) is an oloid.

20 3. Device as claimed in either of claims 1 and 2, characterized in that the legs of each arcuate drive lever (30; 31) subtend a plane (36; 37) and in that the first axes of rotation (11; 12) run transversely to the planes (36; 37).

25 4. Device as claimed in one of claims 1 through 3, characterized in that the second axes of rotation (13; 14) are skewed to each other.

5. Device as claimed in either of claims 3 and 4, characterized in that the second axes of rotation (13; 14) lie in the planes (36; 37).

6. Device as claimed in one of claims 1 through 5, characterized in that the two second axes of rotation (13; 14) are a distance A apart.

7. Device as claimed in one of claims 1 through 6, characterized in that, at each drive lever (30; 31), the first axis of rotation (11; 12) and the second axis of rotation (13; 14) are separated by a gap B.

8. Device as claimed in claim 7, characterized by $A = B$.

9. Device as claimed in one of claims 1 through 8, characterized in that it comprises drive elements (1) rotationally driving at least one gear (20; 21) of the gear unit (2).

10. Device as claimed in one of claims 1 through 9, characterized in that the oval gears (20) exhibit a large semi-axis a and a small semi-axis b and in that the shape of the oval is determined in that two mutually meshing gears (20) roll off on each other at constant axial separation and in positively, i.e. geometrically locking manner.

11. Device as claimed in one of claims 1 through 10, characterized in that the distance between the axes of two mutually meshing oval gears (20) is composed of the sum of the large semi-axis a and the small semi-axis b of these two oval gears (20).

12. Device as claimed in one of claims 1 through 11, characterized in that at least one oval gear (20) exhibits a ratio of its small semi-axis (b) to its large semi-axis (a) of $1/\sqrt{2}$.

5 13. Device as claimed in one of claims 1 through 12, characterized in that at least one oval gear (20) exhibits a ratio of its small semi-axis (b) to its large semi-axis (a) of $1/2$.